

WHAT IS CLAIMED IS:

1        1. A method of building at least one stream of  
2        smokable material from a mixture containing randomly dis-  
3        tributed relatively large first particulate material and  
4        randomly distributed relatively small second particulate  
5        material including a coarser fraction and a finer frac-  
6        tion, comprising the steps of:

7                advancing the mixture against one side of at least  
8        one moving belt forming part of a pneumatic conveyor and  
9        having a permeability such that the belt entrains the  
10       first material but permits at least some of the second  
11       material to pass therethrough;

12               thereupon at least partially segregating the  
13       coarser an the finer fractions of the at least some  
14       second material from each other; and

15               admitting at least some of the segregated coarser  
16       fraction into the entrained first material.

1           2. The method of claim 1, further comprising the  
2 steps of conveying the segregated finer fraction of the  
3 at least some second material in an air stream, and se-  
4 parating the finer fraction from the air stream.

1           3. The method of claim 1, wherein the at least  
2 one belt moves in a predetermined direction and said ad-  
3 vancing step includes feeding the mixture against the  
4 one side of the belt in the form of a shower which is  
5 elongated in said predetermined direction.

1           4. The method of claim 1, further comprising the  
2 step of establishing a suction chamber as a part of the  
3 pneumatic conveyor at the other side of the at least one  
4 belt to attract the first particulate material against  
5 the one side of the at least one belt.

1           5. The method of claim 1, wherein said segregating  
2 step includes directing at least some second material  
3 against the one side of the at least one moving belt.

1           6. The method of claim 1, wherein said segregating  
2 step includes directing the at least some second material  
3 against the first material being entrained by the at  
4 least one moving belt.

1           7. The method of claim 1, wherein said admitting  
2 step includes pneumatically conveying said at least some  
3 of the segregated coarser fraction into the entrained  
4 first material.

1           8. The method of claim 1 of simultaneously  
2 building at least two streams of smokable material,  
3 further comprising the step of breaking up the mixture  
4 into at least two flows, said advancing step including  
5 simultaneously advancing each of the at least two flows  
6 against one side of one of at least two discrete moving  
7 belts and further comprising the step of dividing the  
8 at least some second material which has passed through  
9 the at least two belts into at least two masses prior  
10 to said segregating step.

1           9. The method of claim 8, further comprising the  
2 step of introducing each of the at least two masses into  
3 a different one of the at least two streams.

1           10. The method of claim 1, wherein said advancing  
2 step includes advancing the mixture against a relatively  
3 large first portion of the one side of the at least one  
4 belt and said segregating step includes directing the  
5 at least some second material against a relatively small  
6 second portion of the one side of the at least one belt  
7 so that the finer fraction passes through the at least  
8 one belt and the coarser fraction moves with the at least  
9 one belt, and evacuating the finer fraction at the other  
10 side of the at least one belt.

1           11. The method of claim 10, wherein said evacuat-  
2 ing step includes entraining the finer fraction in an  
3 air stream and further comprising the step of regulating  
4 the quantity of air in the air stream to establish at  
5 the other side of the at least one belt a constant subat-  
6 mospheric pressure.

1           12. The method of claim 10, wherein the belt is  
2 arranged to move in a predetermined direction and the  
3 at least some second material is directed against the one  
4 side of the belt upstream of delivery of first material,  
5 as seen in said predetermined direction.

1           13. The method of claim 1, wherein said  
2 segregating step includes directing the at least some  
3 second material into the mixture advancing against the  
4 one side of the at least one moving belt.

1           14. The method of claim 13, further comprising  
2 the step of converting the entrained first material into  
3 a rod-like filler including removing a first portion of  
4 the entrained first material from a second portion at  
5 said one side of the at least one moving belt, said  
6 directing step including admitting the at least some  
7 second material into the second portion of the advancing  
8 first material.

1           15. The method of claim 1, wherein the at least  
2 one moving belt is arranged to move lengthwise in a pre-  
3 determined direction and further comprising the step of  
4 imparting to the at least some of the second material  
5 a component of movement in said predetermined direction  
6 prior to said admitting step.

1        16. Apparatus for building at least one stream  
2 of smokable material from a mixture containing relatively  
3 large first particulate material and relatively small  
4 second particulate material, comprising:

5            transporting means including a pneumatic conveyor  
6 having an endless running belt including a first side  
7 and a second side, and at least one first suction chamber  
8 adjacent one side of said belt and having an outlet;

9            means for feeding at least a portion of the mixture  
10 against the other side of the belt opposite said first  
11 suction chamber, said belt having a permeability such  
12 that it entrains the first material but permits at least  
13 some second material to pass into said chamber;

14           means for evacuating second material from the first  
15 suction chamber by way of said outlet;

16           means for admitting evacuated second material  
17 against at least one of (a) said other side of said belt  
18 and (b) the first material being entrained by the belt;

19           at least one second suction chamber disposed at  
20 said one side of said belt and arranged to gather second  
21 material being furnished by said admitting means and hav-  
22 ing passed through the belt due to suction in at least  
23 one of said chambers; and

24           means for drawing air and second material from said  
25 at least one second suction chamber.

1           17. The apparatus of claim 16, wherein at least  
2 one of said material admitting means and said means for  
3 drawing air and second material comprises at least one  
4 air conveying conduit.

1           18. The apparatus of claim 16, wherein the volume  
2 of said at least one first suction chamber greatly  
3 exceeds the volume of said at least one second suction  
4 chamber.

1           19. The apparatus of claim 16, wherein said at  
2 least one pneumatic conveyor further includes means for  
3 moving said belt in a predetermined direction, said at  
4 least one second suction chamber being disposed upstream  
5 of said at least one first suction chamber, as seen in  
6 said predetermined direction.

1           20. The apparatus of claim 16, wherein said at  
2 least one second suction chamber is disposed in said at  
3 least one first suction chamber.



1           21. The apparatus of claim 16, wherein said at  
2     least one pneumatic conveyor further includes means for  
3     moving said belt in a predetermined direction, said at  
4     least one second suction chamber having a first length  
5     and said at least one first suction chamber having a  
6     greater second length, as seen in said predetermined di-  
7     rection.

1           22. The apparatus of claim 16, wherein said at  
2     least one pneumatic conveyor further includes means for  
3     moving said belt in a predetermined direction, said at  
4     least one second suction chamber being spaced apart from  
5     said admitting means as seen in said predetermined direc-  
6     tion.

1           23. The apparatus of claim 16, wherein said means  
2     for admitting the evacuated second material is arranged  
3     to discharge second material into said feeding means.

1           24. The apparatus of claim 16, wherein said at  
2   least one pneumatic conveyor further includes means for  
3   moving said belt in a predetermined direction, said means  
4   for admitting the evacuated second material being  
5   arranged to discharge second material with a component  
6   of movement in said predetermined direction.

1           25. The apparatus of claim 16, further comprising  
2   means for monitoring the pressure in said at least one  
3   second suction chamber.

1           26. The apparatus of claim 16, further comprising  
2   means for monitoring the pressure in said at least one  
3   first suction chamber.

1           27. The apparatus of claim 16, further comprising  
2   means for regulating the pressure in said at least one  
3   second suction chamber.

1           28. The apparatus of claim 16, further comprising  
2 signal generating first sensor means for monitoring the  
3 pressure in said at least one first suction chamber, se-  
4 cond signal generating sensor means for monitoring the  
5 pressure in said at least one second suction chamber,  
6 control means for processing the signals being generated  
7 by said first and second sensor means, and means for ad-  
8 justing said air drawing means in response to signals  
9 being processed by said control means.

1           29. The apparatus of claim 16, wherein said trans-  
2 porting means includes two conveyors each having an end-  
3 less foraminous running belt and discrete second suction  
4 chambers for each belt, said feeding means including  
5 means for dividing the mixture into two fractions, and  
6 means for feeding a discrete one of said fractions of the  
7 mixture against the other side of each of said belts,  
8 said means for admitting including means for directing  
9 second material toward the other side of the respective  
10 belt at least substantially opposite the respective se-  
11 cond suction chamber so that at least a substantial part  
12 of the finer fraction of second material having been di-  
13 rected against the other side of the respective belt is  
14 drawn into the respective second suction chamber.

1           30. The apparatus of claim 29, wherein said means  
2   for admitting further includes adjustable means for  
3   breaking up second material into a plurality of discrete  
4   masses, one for each of said directing means.